

REMARKS / ARGUMENTS

I. Status of the Claims.

Claims 1, 3-23, and 25-41 remain pending in this Application. Claims 2 and 24 have been cancelled herein. Claims 1, 10, and 25-27 are currently amended herein.

New claims 42-49 have been added.

II. Rejection of Certain Claims Under 35 U.S.C. § 112.

Claim 32 stands rejected by the Examiner under 35 U.S.C. 112, second paragraph, as indefinite. The Examiner has stated that claim 32 “claims that the wellbores are separated from each other by a distance but then gives a limit to the distance in acres,” and that “[d]istance suggests a single dimension measurement whereas acres are a multi-dimensional measurement for area.” Office Action, at 2.

Claim 31, from which claim 32 depends, claims a system comprising a network of conduits connecting a fluid outlet port to a plurality of wellbores. Claim 32 recites that the wellbores are separated from each other by a distance of up to about 640 acres.

Claim language is sufficiently definite under 35 U.S.C. § 112, second paragraph if “one of ordinary skill in the art would understand what is claimed” by that language. *See* MPEP § 2173.05(b). Applicants respectfully submit that wellbore spacing in the hydrocarbon production industry is commonly referred to in terms of acres. Applicants respectfully assert that one of ordinary skill in the art would recognize the meaning of wellbores separated from each other by a distance of up to about 640 acres. Accordingly, Applicants respectfully request the removal of the rejection of claim 32 under 35 U.S.C. § 112, second paragraph, and respectfully request the timely issuance of a Notice of Allowance for this claim.

III. Rejection of Certain Claims Under 35 U.S.C. § 102(b) in view of U.S. Patent No. 3,754,598 to Holloway.

Claims 1-8, 10, and 20-26 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Pat. No. 3,754,598 to Holloway (hereinafter, “*Holloway*”). As noted above, claims 2 and 24 have been cancelled herein.

Regarding *Holloway*, the Examiner states:

Holloway, Jr. teaches in column 1, line 3 - column 2, line 56 a method of passing flooding fluid through a hydrogen-containing formation, transmitting oscillatory pressure waves outwardly through the formation while injecting the flooding fluid. The reference teaches that this injection method is equipped for passing flooding fluid from the surface. By continually injecting fluid down the well a positive pressure is maintained in the formation. The pressure waves passing through the formation causes the fluid position within the pore spaces of the formation to be forced therefrom.

The reference teaches the method of having preselected amplitudes in the range of about 10 to 5,000 psi. The reference teaches the use of frequencies in the range of about 0.001 Hz to 25 Hz. The reference method has the ability to alter the amplitude and frequency of the pressure waves for more efficiently recovering hydrocarbons from a subterranean hydrocarbon-containing formation.

The reference teaches in Figure 1, a production well that is equipped for producing fluids entering the well.

(Office Action, at 2-3.)

A. Claims 1 and 3-8

Applicants have amended independent claim 1 to recite that the step of applying a pressure pulse is performed at about, or above, the earth's surface. Applicants note the Examiner's statement that *Holloway* "teaches that this injection method is equipped for passing flooding fluid from the surface" (Office Action, at 2-3), but Applicants respectfully assert that the Examiner has not shown *Holloway* to disclose the *application* of a pressure pulse that is *performed* at about, or above, the earth's surface.

Holloway discloses the use of an "oscillatory pressure wave transmitter 8 . . . [that] is positioned adjacent the formation 6" (*Holloway*, Col. 1, lines 56-59), which is the formation to be stimulated. Though *Holloway* does state that the transmitter 8 can be positioned at various positions relative to the formation 6 (*id.*, Col. 1, lines 64-66), Applicants respectfully submit that *Holloway* fails to teach positioning the transmitter 8 at any location that could be described as "about, or above, the earth's surface," as required by Applicants' amended claim 1.

Holloway's Figures 1-5 all show the transmitter 8 positioned *within the formation 6 to be stimulated*. (*Id.*, Figs. 1-5; *see also id.*, Col. 1, line 67 - Col. 2, line 7). Applicants respectfully submit that *Holloway*'s Figure 1 clearly shows that the formation 6 lies far below the earth's surface. (*Id.*, Fig. 1.) Though *Holloway*'s Figure 4 illustrates the transmitter 8 positioned

adjacent an upper portion of the formation 6, Applicants respectfully emphasize again that the transmitter is resident *within the formation 6*, which Applicants respectfully submit that the Examiner has not shown to be located at “about, or above, the earth’s surface.” Accordingly, Applicants respectfully submit that *Holloway* has not been shown to disclose the *application* of a pressure pulse that is *performed* at about, or above, the earth’s surface.

To anticipate a claim under 35 U.S.C. §102(b), a reference must teach or suggest each and every limitation of the subject claim. MPEP § 2131. Because *Holloway* has not been shown to disclose the *application* of a pressure pulse that is *performed* at about, or above, the earth’s surface, it does not teach or suggest every element of Applicants’ independent claim 1, as amended. Therefore, Applicants respectfully submit that Applicants’ independent claim 1, as amended, and claims 3-8 that are dependent therefrom, are not anticipated by *Holloway*. Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 102(b) against these claims, and further request the timely issuance of a Notice of Allowance for these claims.

B. Claims 10, 20-23, and 25-26

Applicants have amended independent claim 10 to recite that the injection means and pressure pulsing means of the claimed system are located at about, or above, the earth’s surface. As noted above, Applicants respectfully submit that the Examiner has failed to show that *Holloway* discloses the location of pressure pulsing means located at about, or above, the earth’s surface.

Accordingly, Applicant respectfully submits that Applicant’s independent claim 10, as amended, and claims 20-23 and 25-26 that are (directly or indirectly) dependent therefrom, are not anticipated by *Holloway*. Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. 102(b) against these claims, and further requests the timely issuance of a Notice of Allowance for these claims.

IV. Rejection of Certain Claims Under 35 U.S.C. § 102(a) in view of U.S. Patent No. 6,241,019 to Davidson et al.

Claims 1-4, 6-8, 10, 20, and 20-26 stand rejected under 35 U.S.C. § 102(a) as anticipated by U.S. Pat. No. 6,241,019 to Davidson et al (hereinafter, “*Davidson*”). As noted above, claims 2 and 24 have been cancelled herein.

Regarding *Davidson*, the Examiner states:

With respect to claims 1, 3, and 10: Davidson et al teaches in column 9, line 8 - column 12, line 28 a system that keeps a well completely liquid filled between the pulsing device and the formation. By continually injecting fluid down the well a positive pressure is maintained in the formation. The system in Davidson et al shows an example in Figure 9 of a pressure pulsing device that causes a periodic pressure excitation at a controllable frequency and amplitude.

With respect to claims 4, 6-8, 20, 22-23: Davidson et al teaches that the amplitude and frequency of the dynamic excitation can be varied to find the optimum values required to maximize the dynamic enhancement effect. The reference teaches in column 15, lines 21-25 that each perturbation is assumed to be of an elastic nature, which does not produce any residual, irreversible deformation. The reference also teaches in column 15, lines 43-44 a frequency of pulsing in the range of 1 Hz to 10 Hz.

With respect to claims 2 & 24-26: Davidson et al teaches that the pulsing can be generated by a surface pressure pulsing system in a casing embedded in the upper part of the wellbore.

(Office Action, at 3-4.)

A. Claims 1, 3-4, and 6-8

As currently amended herein, Applicants' independent claim 1 recites the periodic application of a pressure pulse to a fluid *while the fluid is being injected into a subterranean formation*, and further recites that the application of the pressure pulse is performed at about, or above, the earth's surface. Applicants note the Examiner's statement that *Davidson* "teaches that the pulsing can be generated by a surface pressure pulsing system in a casing embedded in the upper part of the wellbore," (Office Action, at 4). Applicants respectfully assert, however, that the Examiner has not shown *Davidson* to disclose both (i) the application of a pressure pulse to a fluid *while the fluid is being injected into a subterranean formation*, and (ii) the application of the pressure pulse being *performed* at about, or above, the earth's surface.

At Col. 4, lines 22-26, *Davidson* states that a periodic pressure pulse may be generated, and may be "applied in the stratum or at the surface. . . ." Applicants respectfully submit that the Examiner has not shown that this brief, general statement by *Davidson* amounts to a disclosure of the application of a pressure pulse to a fluid *while the fluid is being injected into a subterranean formation*.

At Col. 9, lines 8-55, *Davidson* describes two embodiments of systems that may be used to implement pressure pulsing in the field, which embodiments are illustrated in

Davidson's Figures 7b and 8. Regarding the disclosure made by these two Figures, Applicants respectfully suggest that the pressure pulse appears to be applied in these two embodiments via an "excitation device 48" (crosshatched in Figs. 7b and 8) shown to be located in the subterranean hydrocarbon-bearing formation, which is shown in both Figures to lie well below the earth's surface. *See id.* Col. 9, lines 50-52 (stating that "pressure pulsing or strain pulsing is applied in these wells through excitation devices 48"). Though *Davidson* does include a statement that "[i]n both cases pulsing can be generated either through a downhole or a surface pressure pulsing" (Col. 9, lines 53-55), Applicants respectfully submit that this brief, general statement in *Davidson* does not disclose any details about what such surface pressure pulsing might comprise, nor how such surface pressure pulsing might be performed. Moreover, Applicants respectfully submit that the Examiner has not shown that this statement by *Davidson* amounts to a disclosure of the application of a pressure pulse to a fluid *while the fluid is being injected into a subterranean formation*.

At Col. 9, line 56 through Col. 10, line 12, *Davidson* describes another embodiment of a system that may be used to implement pressure pulsing for oil exploration, which embodiment is illustrated in *Davidson's* Figure 9. Regarding Figure 9, and the aforementioned corresponding text, Applicants respectfully suggest that the pressure pulse contemplated by this embodiment is expressly disclosed at Column 10 lines 1-2 to be generated by a "piston pump barrel 56," which is shown in Figure 9 to be located proximate to the subterranean hydrocarbon-bearing formation, below the earth's surface. Though *Davidson* does state that surface-located equipment is involved in providing the driving mechanism for piston pump 56 (*see* Col. 10, lines 10-12), Applicants respectfully maintain that the actual application of the pressure pulse is performed below the earth's surface, by piston pump barrel 56, which *Davidson* shows to be located within the subterranean formation. Accordingly, Applicants respectfully submit that this portion of *Davidson* has not been shown to teach or suggest either the (i) the application of a pressure pulse to a fluid *while the fluid is being injected into a subterranean formation*, and (ii) the application of the pressure pulse being *performed* at about, or above, the earth's surface.

At Col. 10, lines 15-21, *Davidson* states the following:

Alternatively, a surface pressure impulse can be applied through the tubing. In this case, the piston pump may be replaced by a *flutter valve* top-hole or bottom-hole assembly *which opens and*

closes to create pressure surges which enter the formation 54 through the perforations, but does not affect the annulus pressure because of the packer 60.

(*Id.*, Col. 10, lines 15-21, emphasis added.) Applicants respectfully suggest that this portion of *Davidson* teaches a periodic pressure pulse that may be generated by opening *and closing* a valve, and thus that involves *interruption* of the flow of fluid into the subterranean formation, in contrast to the continuous injection of fluid into the subterranean formation that Applicants expressly recite in Applicants' claim 1. Accordingly, Applicants respectfully submit that this portion of *Davidson* has not been shown to teach or suggest the application of a pressure pulse to a fluid *while the fluid is being injected into a subterranean formation*.

At Col. 10, line 27 through Col. 11, line 63, *Davidson* describes further embodiments of systems, which embodiments are illustrated in *Davidson's* Figures 10 a-c. However, these embodiments are repeatedly disclosed to apply *strain* pulsing, not pressure pulsing. *See, e.g., id.* Col. 10, lines 38-42 and 57-60; *id.* Col. 11, lines 5-15 and 25-29. As noted by *Davidson*, "[s]train pulsing is a deliberate variation of the strain at a point or local region in the porous medium by applying changes in strain through a device which vibrates, oscillates, or which expands and contracts in volume" (*see* Col. 2, lines 50-54), while "[p]ressure pulsing is a deliberate variation of the fluid pressure in the porous medium through the injection of fluid, withdrawal of fluid, or a combination of alternating periods of injection and withdrawal" (*see* Col. 2, lines 43-46). Accordingly, Applicants respectfully submit that Col. 10, line 27 through Col. 11, line 63 of *Davidson* has not been shown to teach or suggest either the (i) the application of a pressure pulse to a fluid while the fluid is being injected into a subterranean formation, and (ii) the application of the pressure pulse being performed at about, or above, the earth's surface.

At Col. 11, line 64 through Col. 12, line 28, *Davidson* describes an embodiment of a system, which embodiment is illustrated in *Davidson's* Figure 11. In this embodiment, *Davidson* discloses the generation of strain pulses that may be "transmitted *to the bottom of the well, where they may be converted to a pressure pulse*, or mechanically linked to the casing to transmit mechanical strains to the liquid in the formation." (*See* Col. 11, line 67 through Col. 12, line 3.) Applicants respectfully submit that Col. 11, line 64 through Col. 12, line 28 of *Davidson* has not been shown to teach or suggest either the (i) the application of a pressure pulse to a fluid while the fluid is being injected into a subterranean formation, and (ii) the application of the pressure pulse being performed at about, or above, the earth's surface.

Accordingly, Applicants respectfully submits that Applicants' independent claim 1, as amended, and claims 3-4 and 6-8 that are dependent therefrom, are not anticipated by *Davidson*. Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. 102(a) against these claims, and further requests the timely issuance of a Notice of Allowance for these claims.

B. Claims 10, 20-23, and 25-26

Applicants have amended independent claim 10 to recite that the injection means and pressure pulsing means of the claimed system are located at about, or above, the earth's surface. As discussed further below, Applicants respectfully submit that the Examiner has failed to show that *Davidson* discloses the location of pressure pulsing means located at about, or above, the earth's surface.

Regarding *Davidson*'s statement at Col. 4, lines 22-26 that a periodic pressure pulse may be generated and may be "applied in the stratum or at the surface," Applicants respectfully submit that this brief, general statement has not been shown to disclose the location of pressure pulsing means located at about, or above, the earth's surface.

Regarding *Davidson*'s Figures 7b and 8, Applicants respectfully submit that these Figures show pressure pulsing means located in the subterranean hydrocarbon-bearing formation, well beneath the earth's surface.

Regarding the embodiments described in *Davidson* at Col. 9, lines 8-55, and the statement that "pulsing can be generated . . . through . . . a surface pressure pulsing" (Col. 9, lines 53-55), Applicants respectfully submit that this brief, general statement has not been shown to disclose the location of pressure pulsing means located at about, or above, the earth's surface.

Regarding *Davidson*'s Figure 9, and the description at Col. 9, line 56 through Col. 10, line 12, Applicants respectfully submit that this Figure and the accompanying text disclose pressure pulsing means (a piston pump barrel 56) located within the subterranean formation, well beneath the earth's surface.

Regarding the embodiments described in *Davidson* at Col. 10, lines 15-21, describing a "flutter valve top-hole . . . assembly *which opens and closes* to create pressure surges which enter the formation" (Col. 10, lines 15-21 (emphasis added)), Applicants respectfully submit that this statement has not been shown to disclose a means for periodically

applying a pressure pulse . . . to the fluid *while the fluid is being injected into the subterranean formation,*” as required by Applicants’ claim 10.

Regarding the embodiments described in *Davidson* at Col. 10, line 27 through Col. 11, line 63, Applicants respectfully submit that these embodiments are repeatedly disclosed to apply to *strain* pulsing, rather than pressure pulsing.

Regarding the embodiment described in *Davidson* at Col. 11, line 64 through Col. 12, line 28, Applicants respectfully submit that this embodiment is disclosed to involve generation of strain pulses that may be “transmitted to the bottom of the well, where they may be converted to a pressure pulse” (Col. 11, line 67 - Col. 12, line 3), and respectfully submit that this embodiment has not been shown to constitute a disclosure of pressure pulsing means located at about, or above, the earth’s surface, as required by Applicants’ claim 10.

Accordingly, Applicants respectfully submit that Applicant’s independent claim 10, as amended, and claims 20-23 and 25-26 that are (directly or indirectly) dependent therefrom, are not anticipated by *Davidson*. Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 102(a) against these claims, and further request the timely issuance of a Notice of Allowance for these claims.

V. Rejection of Certain Claims Under 35 U.S.C. § 103

a. Claim 9

Claim 9 stands rejected under 35 U.S.C. 103 as being unpatentable over *Holloway* or *Davidson* in view of U.S. Patent No. 5,836,393 to Johnson (hereinafter *Johnson*). The Examiner has stated:

With respect to claim 9: Holloway, Jr. and Davidson et al each teach the features as previously described. Neither Holloway, Jr. nor Davidson et al teach a method having an amplitude that is sufficient to fracture the subterranean formation. Johnson teaches in column 4, lines 12-15 a pressure pulse device that uses an amplitude that fractures the formation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Holloway, Jr. or Davidson et al in view of Johnson and use an amplitude that was sufficient to fracture the formation. Johnson taught that fracturing the formation with a pressure pulse led to the “best stimulation.”

(Office Action, at 4-5.)

Claim 9 depends from claim 1, and therefore includes that claim's limitations of both (i) the application of a pressure pulse to a fluid *while the fluid is being injected into a subterranean formation*, and (ii) the application of the pressure pulse being *performed* at about, or above, the earth's surface. As described earlier in Sections III.A and IV.A, Applicants respectfully assert that neither *Holloway* nor *Davidson* has been shown to disclose all the limitations of claim 1. Applicants further respectfully submit that the Examiner has not shown the combination of *Johnson*, *Holloway*, or *Davidson* to disclose all the limitations of claim 1. Accordingly, the combination of *Johnson*, *Holloway*, and *Davidson* fails to disclose all the limitations of claim 9. Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 103 against claim 9, and further request the timely issuance of a Notice of Allowance for this claim.

b. Claims 11-13.

Claims 11-13 stand rejected under 35 U.S.C. 103 as being unpatentable over *Holloway* or *Davidson* in view of U.S. Patent No. 5,244,362 to Conally (hereinafter *Conally*). The Examiner has stated:

With respect to claims 11-13: *Holloway, Jr.* and *Davidson et al* each teach the features as previously described. Neither *Holloway, Jr.* nor *Davidson et al* teach the injection means comprising a positive head device, positive displacement device, or a pump. Additionally, neither *Holloway, Jr.* nor *Davidson et al* teach a pressure pulsing system that comprises a housing, a plunger disposed in the housing, a power source for moving the plunger within the housing, a fluid injection port through which the fluid is supplied into the housing, and an outlet port through which the fluid exits the housing. *Conally* teaches in column 2, line 17 - column 4, line 23 a pressure pulsing system that has a piston rod or plunger disposed in a cylinder. The cylinder is supplied with fluid through a pump inlet and the fluid exits through a pump outlet. The plunger is powered by a gas that drives the piston attached to the plunger. This overall system is a pump that is a positive head or positive displacement device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified *Holloway, Jr.* or *Davidson et al* in view of *Conally* and used the pressure pulsing system as described in *Conally* because it is capable of handling any fluid, by which is meant gas, liquid or a mixture thereof.

(Office Action, at 5.)

Applicants respectfully traverse the rejection of claims 11-13. Applicants respectfully would show that *Conally* differs from Applicants' present invention in several ways, and Applicants respectfully submit that in view of these differences, *Conally* may not be combinable with *Davidson* or *Holloway*.

1. ***Conally* is Directed to Preventing Pluggage in a Gas Supply Line Driving a Pump, and Has Nothing to Do With Treating a Formation By Applying a Pressure Pulse to a Fluid Being Injected Therein.**

Applicants first traverse the Examiner's description of *Conally* as teaching a pressure pulsing system. *Conally*'s concern is not to apply a pressure pulse to a fluid being continually injected into a subterranean formation, but rather, to supply gas that drives the piston (of a conventional injector pump) in such sharp periodic bursts that the gas supply line will avoid pluggage. *See, e.g., Conally*, Abstract.

Conally generally concerns embodiments that involve two flow streams: (i) a gas supply stream that drives a pump; and (ii) a stream of chemicals that the pump injects into a well bore and/or hydrocarbon flow line. *Conally*'s pulse concerns the gas supply stream.

Conally relates that such streams historically have tended to plug. *Id.*, Col. 3, lines 33-59. As a remedy, *Conally* discloses a system that delivers intermittent "bursts" or "pulses" of supply gas that—when flowing—flow at a sufficiently high velocity to clear any pluggage that may have formed in the supply line. *Id.* Col. 4, lines 24-38; *see also id.* Col. 5, lines 50 - Col. 6, lines 2 (describing means to "periodically purge" a flow line segment between two valves); *id.* Col. 2, lines 53-55 ("Another more specific object of this invention is to provide an improved chemical injector pump in which the supply line is periodically purged.").

In view of *Conally*'s focus on eliminating pluggage in a gas supply line, Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to consider *Conally* in this instance.

2. **Applicants' Pulse is Applied to a Continuously-Injected Fluid; *Conally*'s "Pulse" Constitutes a Burst of Fluid That Flows Only Periodically.**

Applicants' present invention contemplates the continuous injection of a fluid stream into a subterranean formation, and the periodic application of a pressure pulse to the continuously-injected fluid stream. In contrast, *Conally* uses the term "pulse" to describe a

volume of fluid that flows only periodically. *See, e.g., id.*, Col. 2, lines 19-21 (describing periodic purging of the supply line “by providing a burst or pulse of the power gas or liquid”); *id.* Col. 2, lines 31-34 (“Because the solenoid valve opens fully when it opens, a pulse of supply gas passes through the supply line to keep the supply line clear of water, hydrates or debris.”). Applicants respectfully submit that *Conally* has not been shown to apply a pulse to a continuously-injected fluid stream. Rather, *Conally*’s intermittent gas supply stream flows in periodic slugs of fluid that *Conally* describes as bursts or pulses.

3. Applicants Pressure Pulse a Stream That is Injected Into a Subterranean Formation; *Conally*’s Pulses of Supply Gas Are, Contrastingly, Exhausted to the Atmosphere.

Conally’s intermittent bursts or pulses of supply gas displace a piston so as to drive a pump (thereby displacing a volume of chemical into a producing well or hydrocarbon flow line), after which *Conally*’s bursts or pulses of gas are exhausted to the atmosphere. *See, e.g., id.* Col. 4, lines 12-23; *id.* Col. 4, lines 48-61 (describing exhaustion of supply gas). Accordingly, *Conally*’s pulses of supply gas are not injected into a subterranean formation. This again contrasts with Applicants’ present invention, which involves applying a pressure pulse to a fluid that is continuously injected into a subterranean formation.

Moreover, as noted in Part 4 below, to the extent that *Conally*’s pulses of supply gas result in the injection of chemicals into a producing well or hydrocarbon flow line, such injection of chemicals is periodic, rather than continuous.

4. *Conally* Teaches Away From Applicants’ Present Invention, Because *Conally* Teaches Away From the Continuous Injection of Fluid.

Conally discloses a system that involves periodic injection of chemicals, in contrast to the continuous injection of fluid that is required by Applicants’ independent claim 10. In describing conventional systems in use prior to *Conally*’s invention, *Conally* emphasizes that pluggage problems in these prior art systems often were solved by the use of excessively high pump cycle rates that led to overdosing chemicals into oil/gas wells simply to avoid failure of the the injection pumps. *See id.* Col. 1, line 62 - Col. 2, line 10. *Conally* further discloses that a “specific object of this invention is to provide an improved chemical injector pump having a solenoid operated supply and exhaust valve *capable of very low cycle rates.*” *Id.* Col. 2, lines

49-52 (emphasis added). Indeed, in one embodiment, *Conally* discloses that suitable cycle rates for the injection pump may range from 30 cycles per minute to *1 cycle per month*. See *id.* Col. 4, lines 7-10 (emphasis added). Unlike Applicants' claims, which require the application of a pressure pulse to a fluid being continuously injected into a subterranean formation, *Conally*, in contrast, provides bursts or pulses of supply gas, which causes periodic injection of fluid into a hydrocarbon producing well and/or flowline.

5. *Holloway* or *Davidson* in view of *Conally* Fails to Teach All Elements of Applicants' Claim 10, Much Less Claims 11-13.

In addition to the abovementioned deficiencies of *Conally*, Applicants further respectfully submit that (as described earlier in Sections III.B and IV.B) neither *Holloway* or *Davidson* disclose all the limitations of Applicants' claim 10, from which claims 11-13 depend. Applicants further respectfully assert that the combination of *Conally* with either *Holloway* or *Davidson* fails to disclose all the limitations of Applicants' claim 10. Accordingly, the combination of *Conally*, *Holloway*, and *Davidson* fails to disclose all the limitations of claims 11-13, as required to render the claims obvious under 35 U.S.C. 103. MPEP 706.02(j). Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 103 against claims 11-13, and further request the timely issuance of a Notice of Allowance for these claims.

c. Claims 27 and 28.

Claims 27 and 28 stand rejected under 35 U.S.C. 103 as being unpatentable over *Holloway* or *Davidson* in view of U.S. Patent No. 5,056,597 to Stowe (hereinafter *Stowe*). Applicant respectfully traverses.

The Examiner has stated:

With respect to claim 27: Holloway, Jr. and Davidson et al teach the features as previously described. Neither Holloway Jr. nor Davidson et al teach a network of conduits connecting the pressure pulsing system to a plurality of wellbores. Stowe, III teaches in column 1, line 60 - column 2, line 65 a steam injection system for multiple well injection from a common header through steam lines. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Holloway, Jr. or Davidson et al in view of Stowe, III and develop a pressure pulsing system that is connected to a plurality of wellbores because Stowe, III discovered that one could get a

“remarkably high uniformity” of distribution to the multiple well bores.

With respect to claim 28: This is an obvious design expedient that would be based on the formation parameters and the distance between the wellbores at a particular production site. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Holloway, Jr. or Davidson et al in view of Stowe, III and develop a pressure pulsing system that is connected to a plurality of wellbores within the respective area that encapsulates the wellbores.

(Office Action, at 6.)

As described earlier in Sections III.B and IV.B, Applicants respectfully submit that neither *Holloway* or *Davidson* discloses all the limitations of Applicants’ claim 10, from which claims 27 and 28 depend. Applicants further respectfully assert that the combination of *Stowe* with either *Holloway* or *Davidson* fails to disclose all the limitations of Applicants’ claim 10. Accordingly, the combination of *Stowe*, *Holloway*, and *Davidson* fails to disclose all the limitations of claims 27 and 28. Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 103 against claims 27 and 28, and further request the timely issuance of a Notice of Allowance for these claims.

**SUMMARY AND PETITION FOR ONE MONTH EXTENSION OF TIME
TO FILE THIS RESPONSE**

In light of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

In view of the fact that Applicants have added new claims 42-49, and have cancelled two claims herein, Applicants have enclosed check number 939589 for \$700.00 to pay for the additional claims.

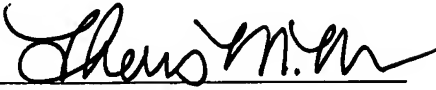
Applicants' Response to this Office Action was due on August 4, 2005. As this Response is being filed on Tuesday, September 6, 2005, and in view of the fact that September 4, 2005 fell on a Sunday, and Monday, September 5, 2005 coincided with a federal holiday (Labor Day), Applicants believe that only a one-month extension of time is indicated in this case. *See* MPEP § 710.05 "Period Ending on Saturday, Sunday, or a Federal Holiday."

Applicants hereby petition under the provisions of 37 C.F.R. §1.136(a) for a one-month extension of time to file this Response. Enclosed herewith is check number 939587 in the amount of \$120.00 for the fee. The Commissioner is hereby authorized to charge Baker Botts L.L.P. (*formerly Baker & Botts, L.L.P.*) Deposit Account No. 02-0383 (Order Number 063718.0167) for any underpayment, or to credit same with any overpayment of fees, in association with this filing.

Applicants believe that there are no additional fees due in association with this filing of this Response. However, should the Commissioner deem that any fees are due, Applicants respectfully request that the Commissioner accept this as a Petition Therefor, and direct that any additional fees be charged to Baker Botts L.L.P.'s Deposit Account No. 02-0383, Order Number 063718.0167.

Respectfully submitted,

BAKER BOTTS L.L.P. (023640)

By: 

Thomas M. Morrow

Reg. No. 55,469

One Shell Plaza

910 Louisiana Street

Houston, Texas 77002-4995

Telephone: 713.229.4006

Facsimile: 713.229.7906

EMail: Tom.Morrow@bakerbotts.com

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